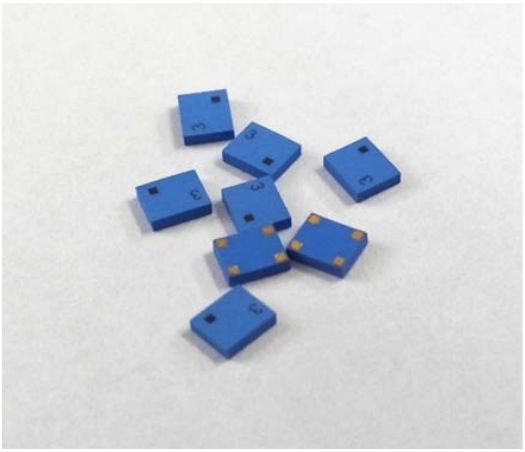
Low-Band Carrier Aggregation Solution

(Preliminary Datasheet-Ver. 1.5)

Applications

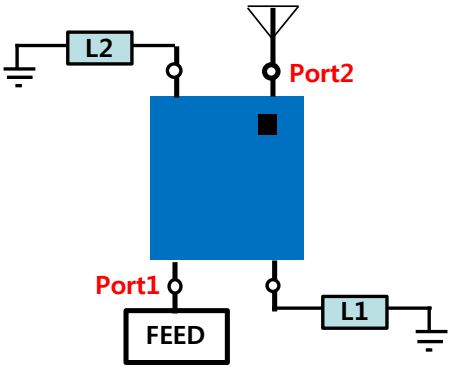
- Mobile device antennas for low frequency Inter-band carrier aggregation(B5&B12/B5&B17/B8&B20/B18&B28)



Features

- Wideband matching for antennas (Bandwidth enhancement up to 300%)
- No DC power supply and software control required
- Applicable to primary and secondary antennas
- Simplified circuit design than that of switchable antenna
- Capable of antenna sharing for variation handset models

Block Diagram

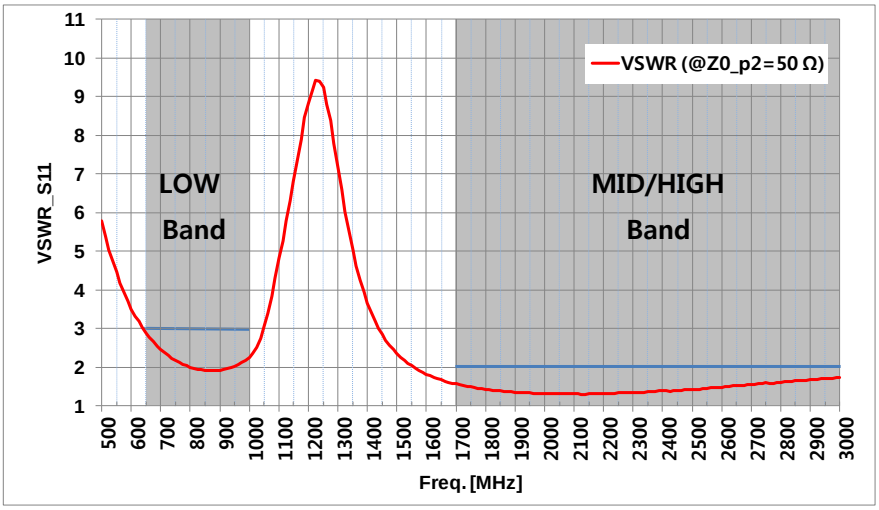


- Port 1 is connected to RF signal.
- Port 2 is connected to an antenna.
- L1 and L2 are external matching components.

Specifications

Dimensions [mm]	2.5 X 3.0 X 0.7
Applicable frequency range [MHz]	650~1000 (Low Band) / 1700~3000 (MID/HIGH Band)
*VSWR (:1) @port1	< 3 (Low Band) / < 2 (MID/HIGH Band)
Operating temperature [°C]	-40 to +85
Storage temperature [°C]	-40 to +125

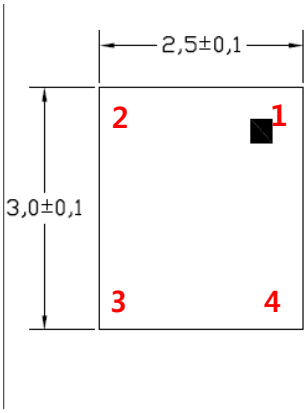
* Specified VSWR values are measured in +25°C. Where, the port 2 is terminated with 50Ω and WBMC is connected L1(12nH) and L2(15nH).



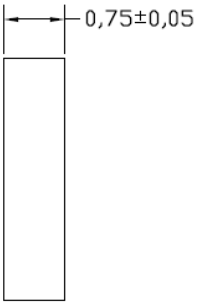
Package outline

[Unit : mm]

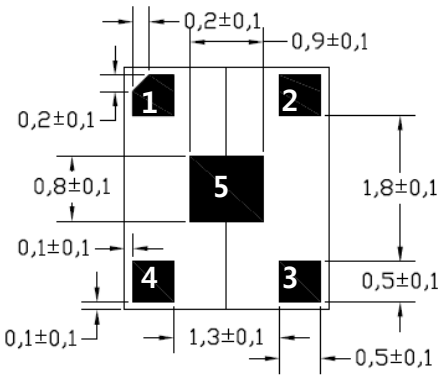
TOP VIEW



SIDE VIEW



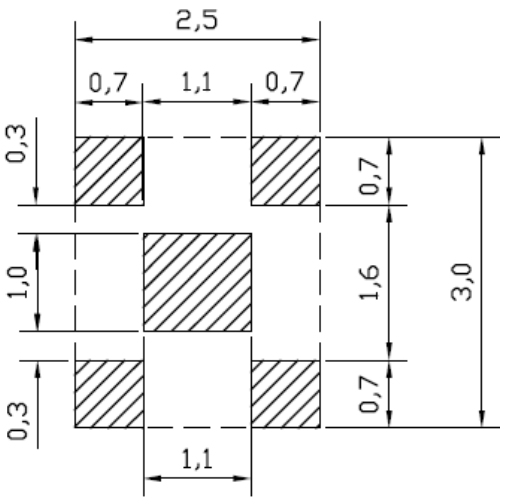
BOTTOM VIEW



Pin No.	Description
1	Port2 (Ant.)
2	L2 connected port
3	Port1 (Feed)
4	L1 connected port
5	Dummy pad

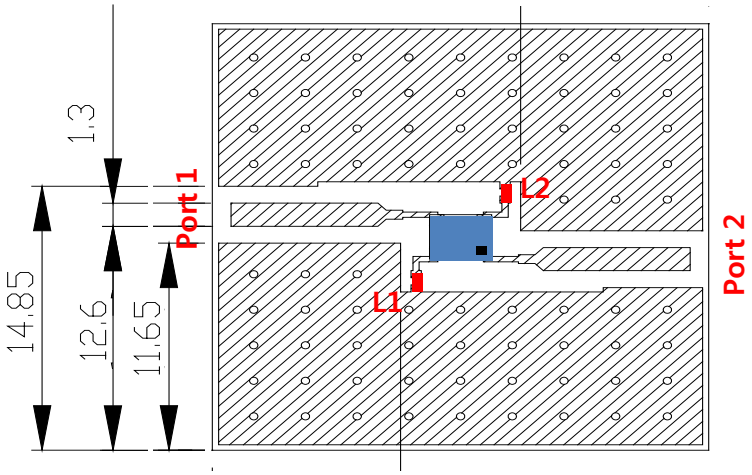
Land pattern

[Unit : mm]



Evaluation board I (2-Port)

[Unit : mm]



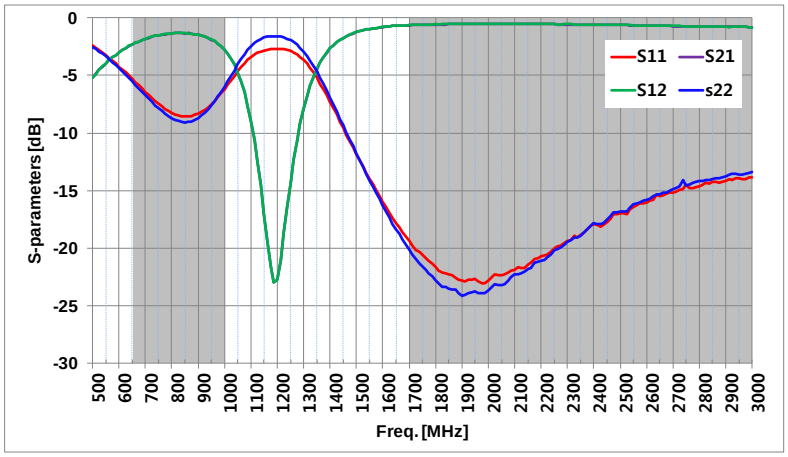
Substrate

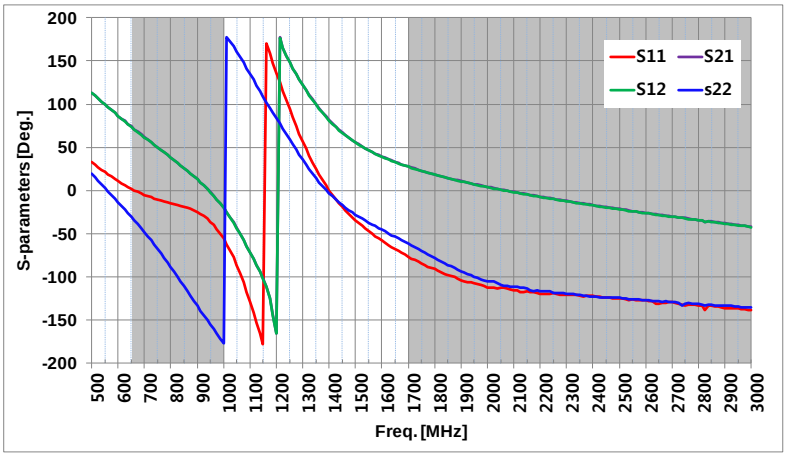
FR4 (ε_r=4.4)
Thickness=0.8mm
Metal thickness=25um
Outline size = 24 X 24 mm

Parts list

No.	Type	Value
L1	1005	10nH
L2		10nH

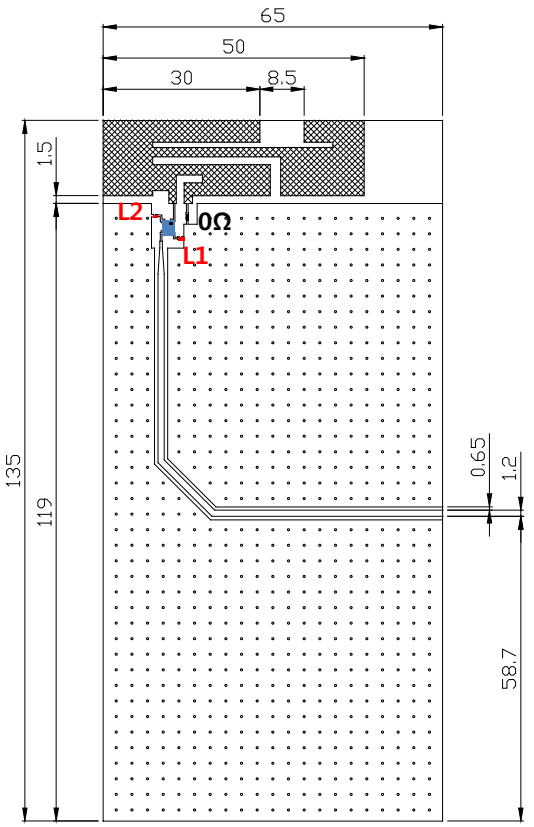
Typical data on EVB I





Evaluation board Ⅱ (with ANT)

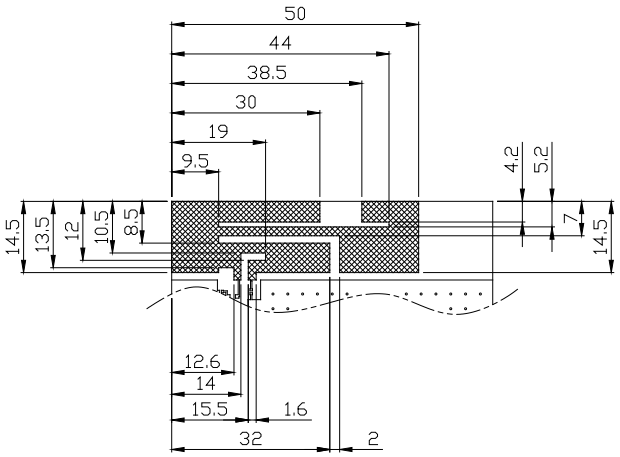
[Unit : mm]



Antenna

Type : Inverted-F

Non-ground size = 65 X 17 mm



Substrate

FR4 (ε_r=4.4)

Thickness=0.8mm

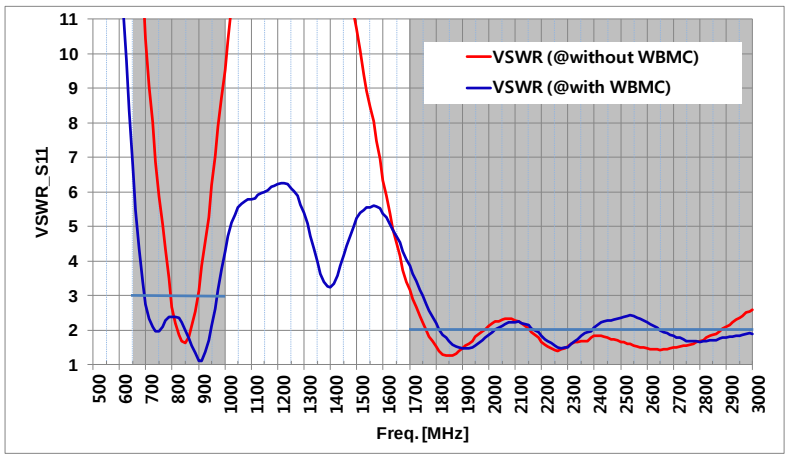
Metal thickness=25um

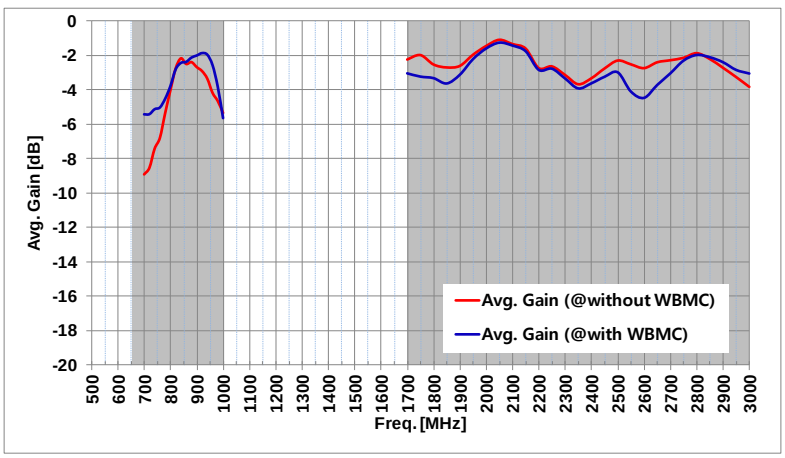
Outline size = 65 X 135 mm

Parts list

No.	Type	Value
L1	1005	10nH
L2		10nH

Typical data on EVBⅡ

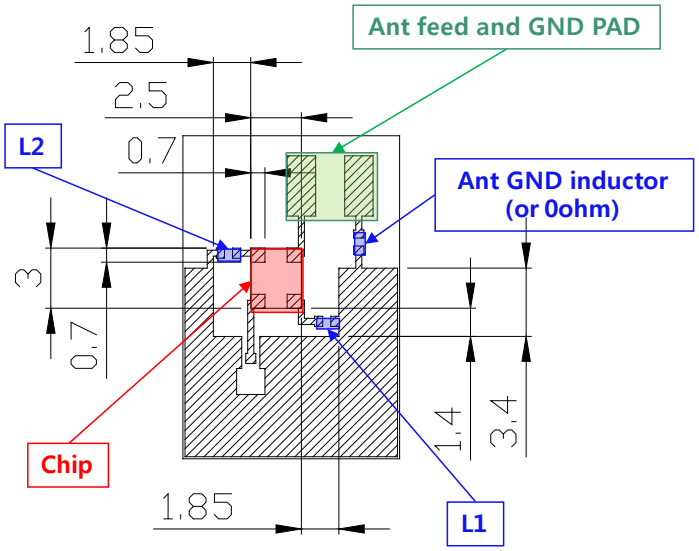




Application note

[Unit : mm]

TOP VIEW



- Metal ground under the area of chip, L1 and L2 must be removed.
- As the value of the antenna GND inductor increases, the radius of the impedance locus increases and the resonant frequency at Band I shifts toward the higher frequency side.
- As the value of L1 decreases, the resonant frequency near 900 MHz shifts toward the higher frequency side.
- As L2 decreases, the resonant frequency near 700 MHz increases.
- Available values of L1 and L2 are 4.7 nH up to 15 nH .

Part No (EMW)

Part No (EMW) **EWM-3025-F0630EA0**

E	WM	-	3025	-	F0630	E	A	0
(1)	(2)		(3)		(4)	(5)	(6)	(7)

(1) EMW
(2) series : Wideband impedance Matching component
(3) Dimensions First two disits : length(mm)
Last two disits : Width(mm)
(4) Matching band frequency F : Fequency
First two disita : 0.6GHz
Last two disits : 3 GHz
(5) Packaging P : Embossed paper tape
E : Embossed plastc tape
(6) termination N : nickel barrier
A : Au plating
(7) Version Nomber